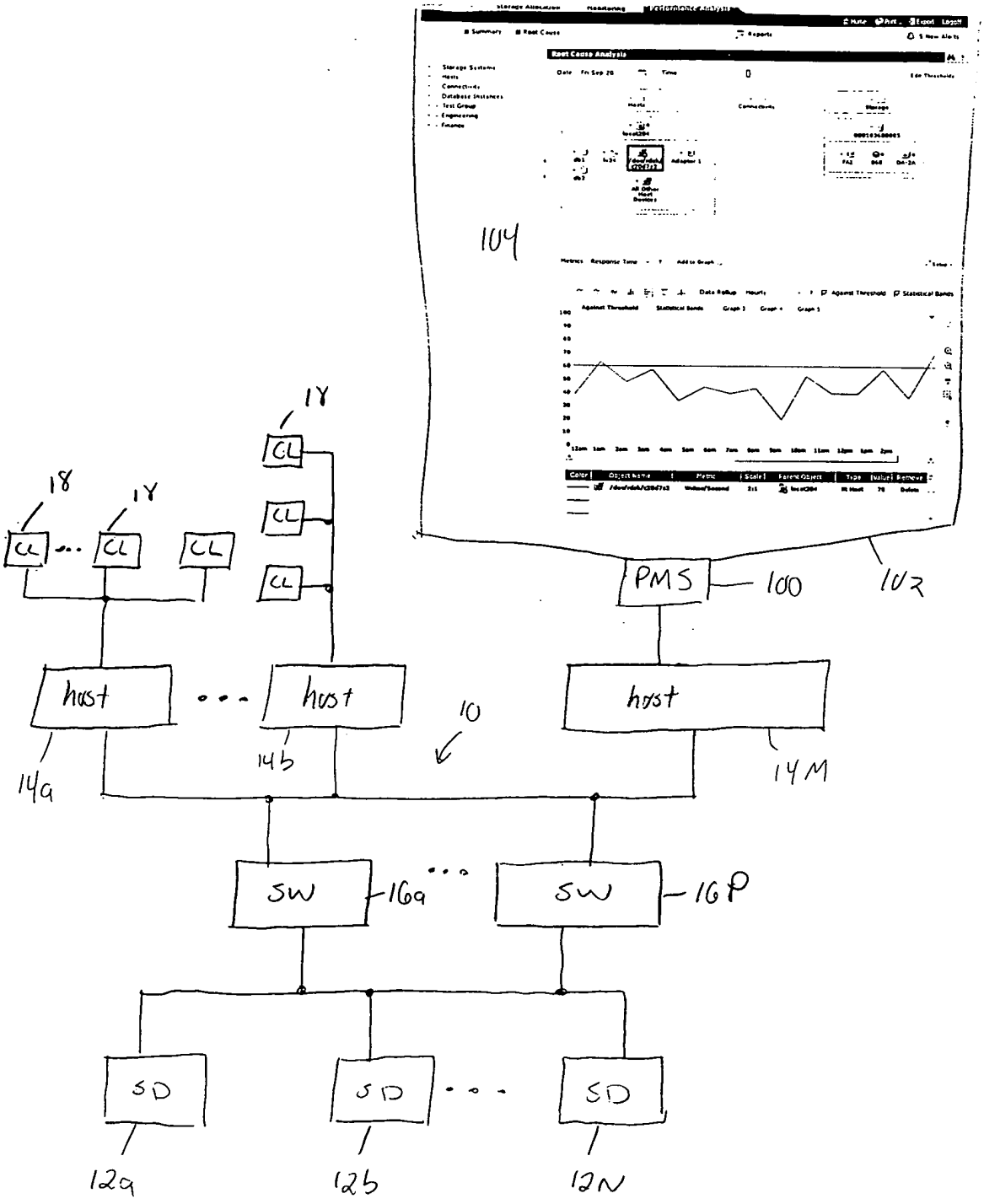

104
1Y
CL
18
1Y
CL
CL
CL
CL
CL
PMS
100
102
host
host
host
10
14a
14b
14M
SW
16a
SW
16P
SD
SD
SD
12a
12b
12N

FIG. 1

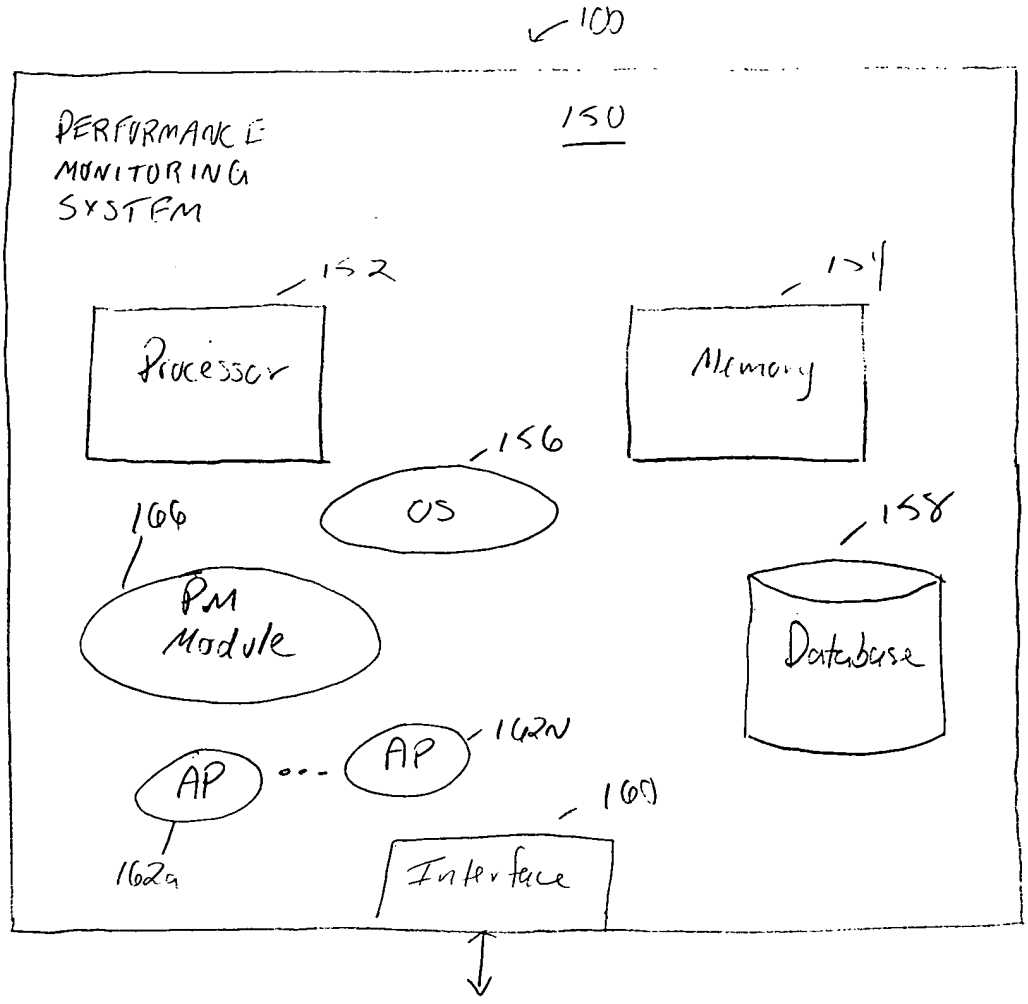

100
PERFORMANCE MONITORING SYSTEM
150
152
Processor
154
Memory
156
OS
158
Database
166
PM Module
AP
AP
162N
162a
160
Interface

FIG. 2

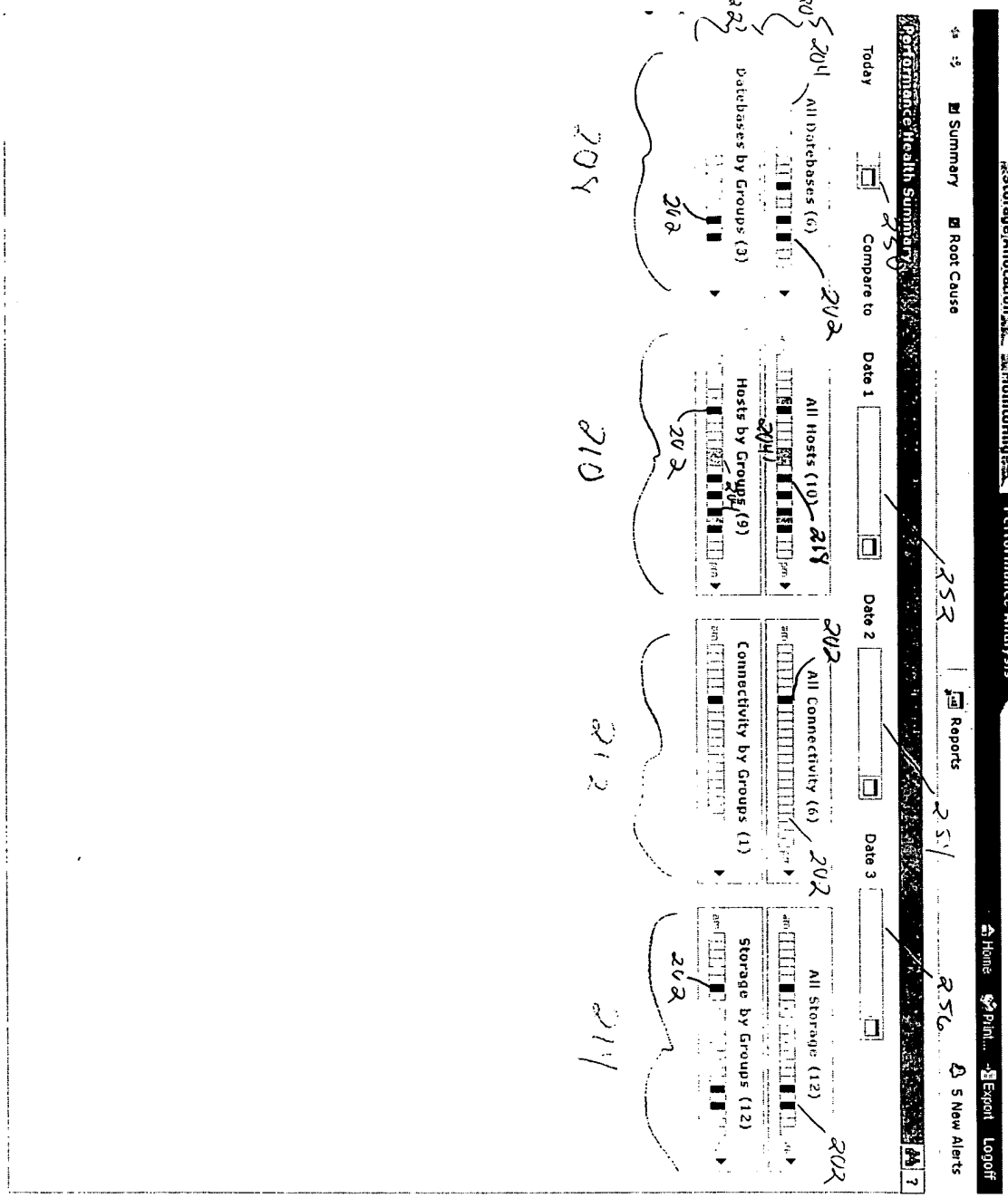

Storage Allocation
Monitoring
Performance Analysis
Home
Print...
Export
Logoff
Summary
Root Cause
Reports
5 New Alerts
Performance Health Summary
Today
Compare to
Date 1
Date 2
Date 3
All Databases (6)
Databases by Groups (3)
All Hosts (10)
Hosts by Groups (9)
All Connectivity (6)
Connectivity by Groups (1)
All Storage (12)
Storage by Groups (12)
200
202
204
206
208
210
212
214
216
218
220
222
250
252
254
256

FIG. 3

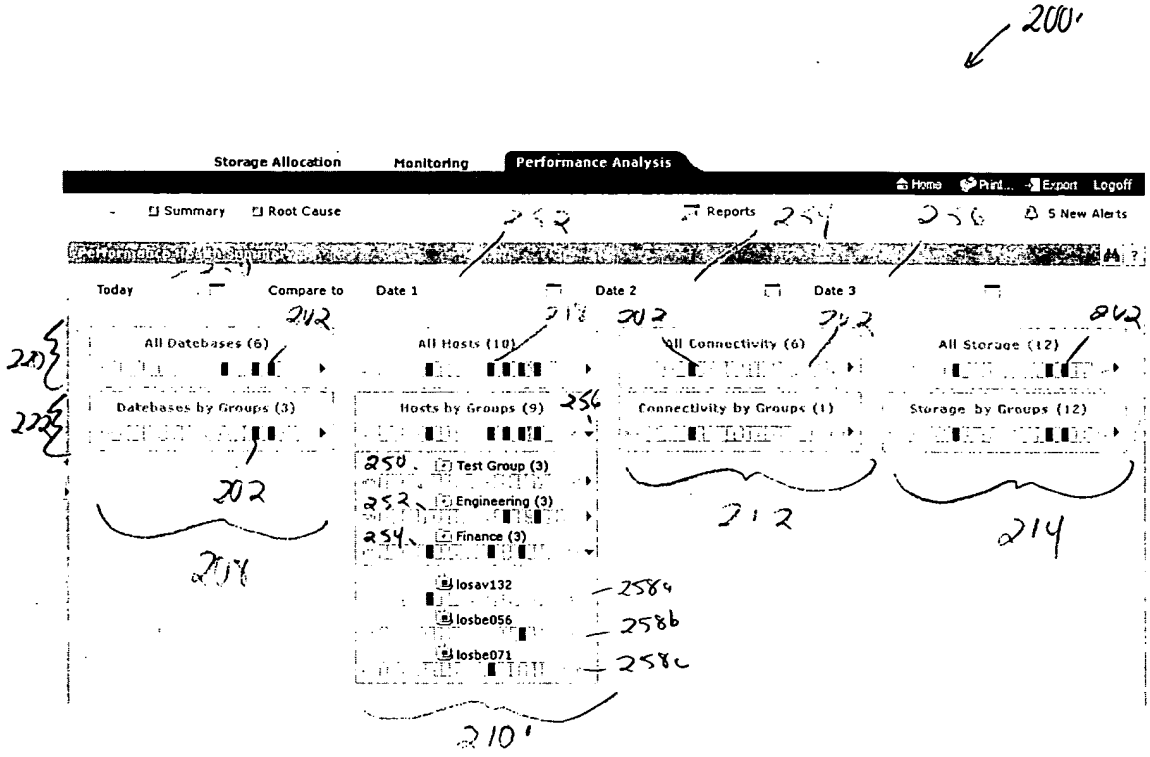

200'
Storage Allocation
Monitoring
Performance Analysis
Home
Print...
Export
Logoff
Summary
Root Cause
Reports
5 New Alerts
Today
Compare to
Date 1
Date 2
Date 3
All Databases (6)
Databases by Groups (3)
All Hosts (10)
Hosts by Groups (9)
Test Group (3)
Engineering (3)
Finance (3)
losav132
losbe056
losbe071
All Connectivity (6)
Connectivity by Groups (1)
All Storage (12)
Storage by Groups (12)
202
212
214
210'

FIG. 3A

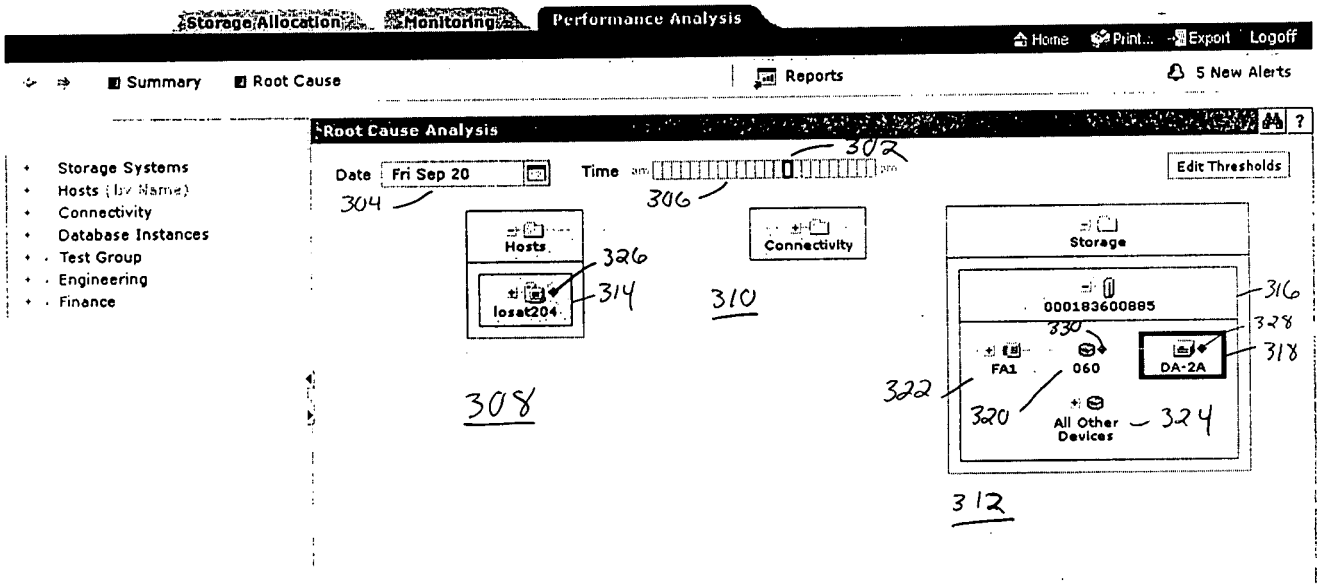

Storage Allocation
Monitoring
Performance Analysis
Home
Print...
Export
Logoff
Summary
Root Cause
Reports
5 New Alerts
Root Cause Analysis
Storage Systems
Hosts (by Name)
Connectivity
Database Instances
Test Group
Engineering
Finance
Date
Fri Sep 20
Time
Edit Thresholds
Hosts
losat204
Connectivity
Storage
000183600885
FA1
060
DA-2A
All Other Devices
300
302
304
306
308
310
312
314
316
318
320
322
324
326
328
330

FIG 4

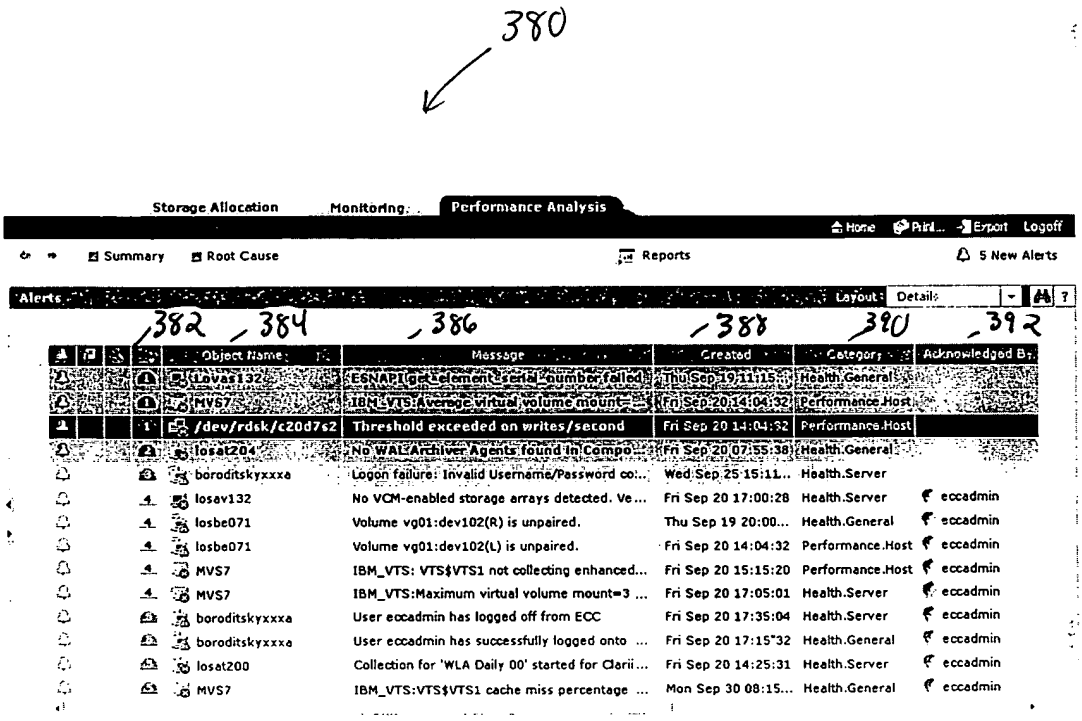

380
Storage Allocation
Monitoring
Performance Analysis
Home
Print...
Export
Logoff
Summary
Root Cause
Reports
5 New Alerts
Alerts
Layout: Details
382
384
386
388
390
392
Object Name
Message
Created
Category
Acknowledged By
losav132
ECSNAPI:get_element_config:numbers failed
Thu Sep 19 11:15...
Health.General
MVS7
IBM_VTS:Average virtual volume mount...
Fri Sep 20 14:04:32
Performance.Host
/dev/rdsk/c20d7s2
Threshold exceeded on writes/second
Fri Sep 20 14:04:32
Performance.Host
losat204
No WLA Archiver Agents found in Compo...
Fri Sep 20 07:55:38
Health.General
boroditskyxxxa
Logon failure: Invalid Username/Password co...
Wed Sep 25 15:11...
Health.Server
losav132
No VCM-enabled storage arrays detected. Ve...
Fri Sep 20 17:00:28
Health.Server
eccadmin
losbe071
Volume vg01:dev102(R) is unpaired.
Thu Sep 19 20:00...
Health.General
eccadmin
losbe071
Volume vg01:dev102(L) is unpaired.
Fri Sep 20 14:04:32
Performance.Host
eccadmin
MVS7
IBM_VTS: VTS$VTS1 not collecting enhanced...
Fri Sep 20 15:15:20
Performance.Host
eccadmin
MVS7
IBM_VTS:Maximum virtual volume mount=3 ...
Fri Sep 20 17:05:01
Health.Server
eccadmin
boroditskyxxxa
User eccadmin has logged off from ECC
Fri Sep 20 17:35:04
Health.Server
eccadmin
boroditskyxxxa
User eccadmin has successfully logged onto ...
Fri Sep 20 17:15:32
Health.General
eccadmin
losat200
Collection for 'WLA Daily 00' started for Clarii...
Fri Sep 20 14:25:31
Health.Server
eccadmin
MVS7
IBM_VTS:VTS$VTS1 cache miss percentage ...
Mon Sep 30 08:15...
Health.General
eccadmin

FIG. 4A

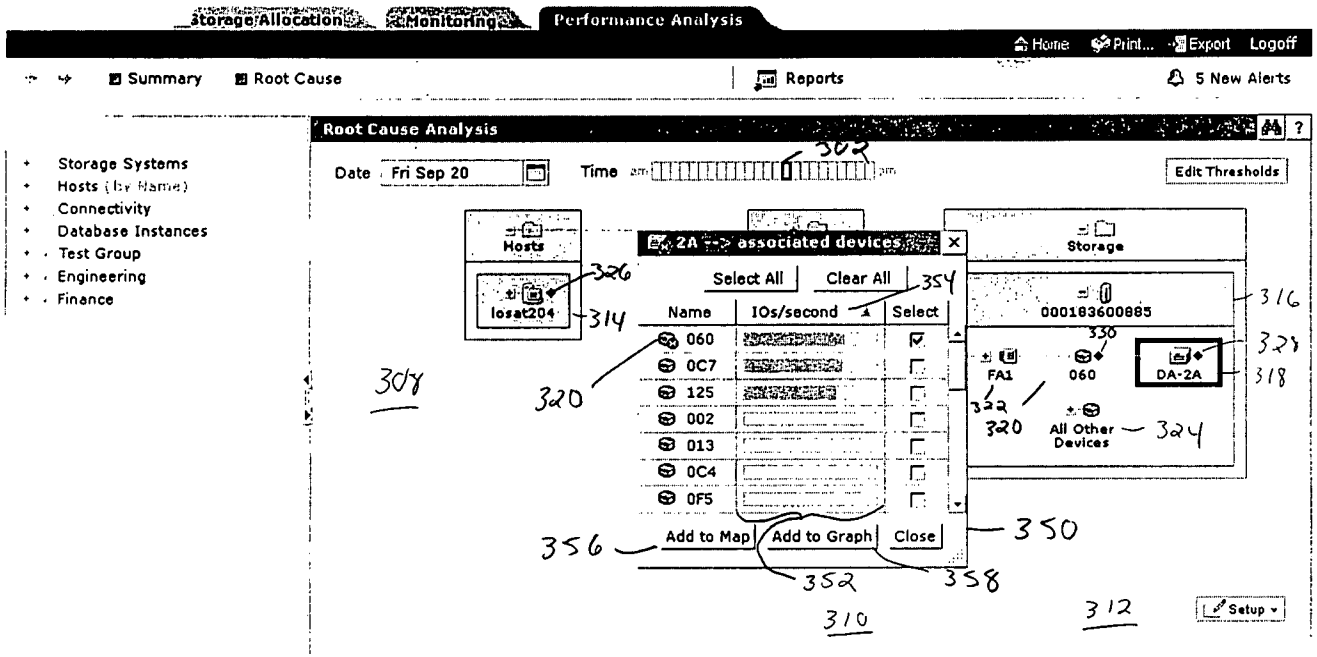
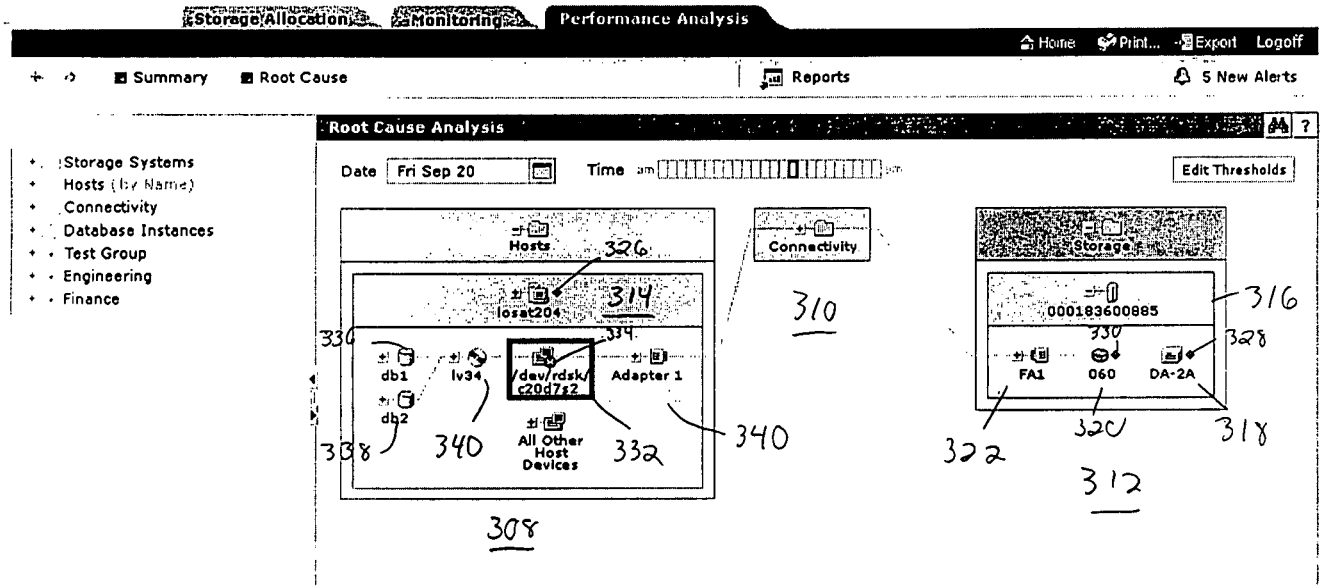
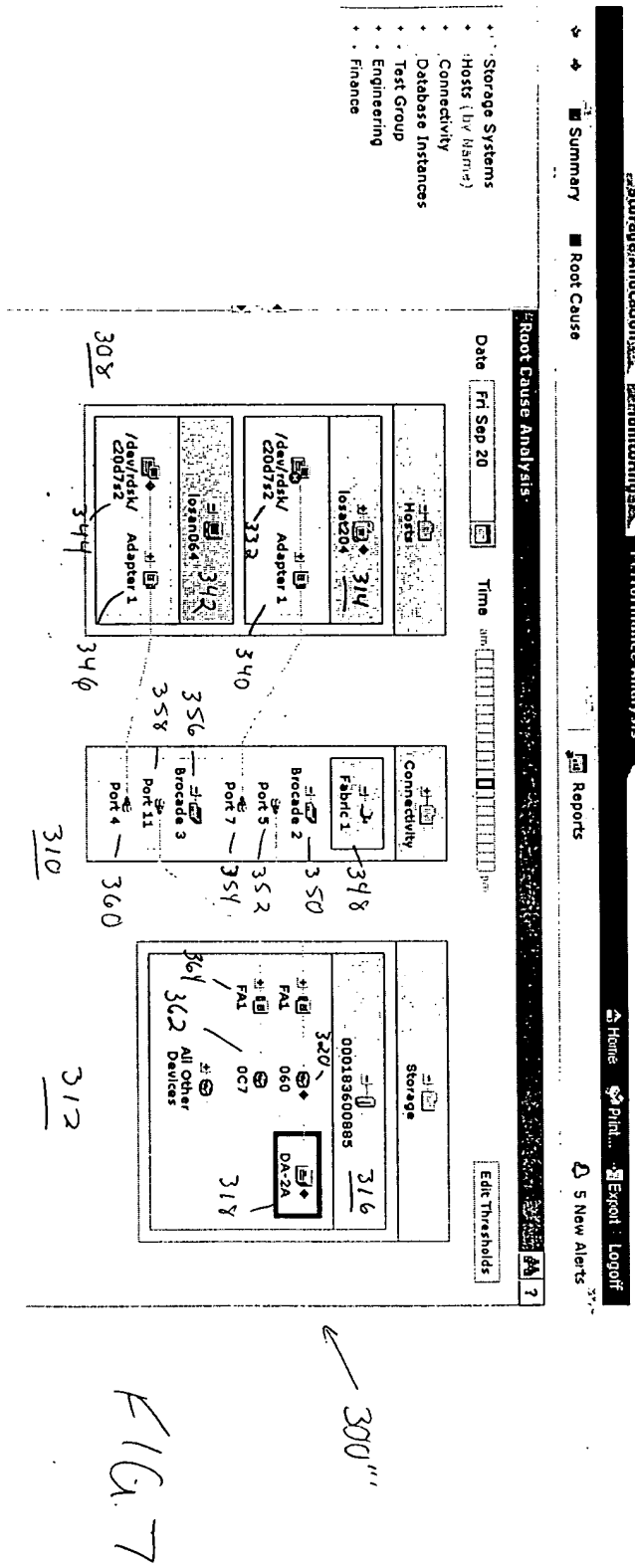

Storage Allocation
Monitoring
Performance Analysis
Home
Print...
Export
Logoff
Summary
Root Cause
Reports
5 New Alerts
Root Cause Analysis
Storage Systems
Hosts (by Name)
Connectivity
Database Instances
Test Group
Engineering
Finance
Date
Fri Sep 20
Time
Edit Thresholds
Hosts
losat204
2A --> associated devices
Select All
Clear All
Name
IOs/second
Select
060
0C7
125
002
013
0C4
0F5
Add to Map
Add to Graph
Close
Storage
000183600885
FA1
060
DA-2A
All Other Devices
Setup
300'
302
304
306
310
312
314
316
318
320
322
324
326
328
330
350
352
354
356
358

FIG 5


Storage Allocation
Monitoring
Performance Analysis
Home
Print...
Export
Logoff
Summary
Root Cause
Reports
5 New Alerts
Root Cause Analysis
Storage Systems
Hosts (by Name)
Connectivity
Database Instances
Test Group
Engineering
Finance
Date
Fri Sep 20
Time
Edit Thresholds
Hosts
326
314
losat204
330
db1
db2
lv34
/dev/rdsk/c20d7s2
334
Adapter 1
338
340
All Other Host Devices
332
340
308
Connectivity
310
Storage
316
000183600885
330
328
FA1
060
DA-2A
322
320
318
312

300"

FIG 6


Storage Systems
Hosts (by Name)
Connectivity
Database Instances
Test Group
Engineering
Finance
Storage Allocation
Performance Analysis
Summary
Root Cause
Reports
Home
Print...
Export
Logoff
5 New Alerts
Root Cause Analysis
Date
Fri Sep 20
Time
Edit Thresholds
Hosts
Connectivity
Storage
lose204
/dev/rdsk/c20d7s2
Adapter 1
loxan064
Fabric 1
Brocade 2
Port 5
Port 7
Brocade 3
Port 11
Port 4
000183600885
FA1
060
0C7
DA-2A
All other Devices
308
314
332
342
344
346
340
356
358
348
350
352
354
360
310
316
320
318
364
362
312
300''
FIG. 7

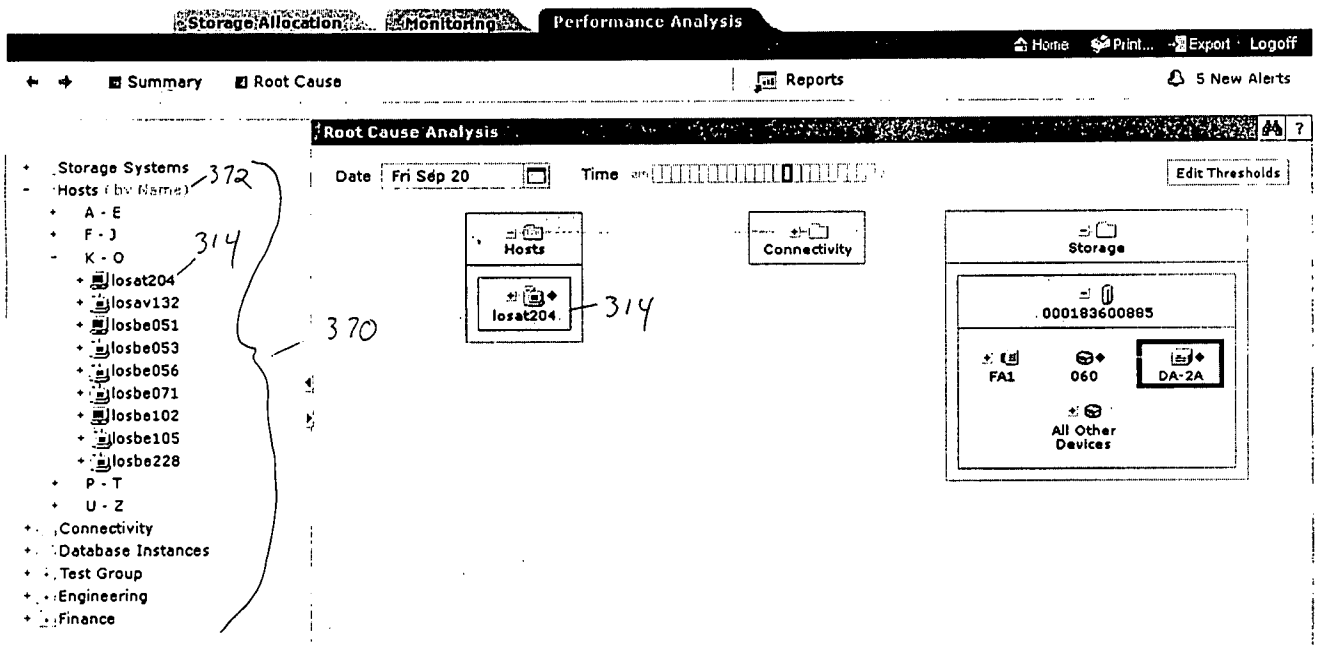

Storage Allocation
Monitoring
Performance Analysis
Home
Print...
Export
Logoff
Summary
Root Cause
Reports
5 New Alerts
Root Cause Analysis
Storage Systems
Hosts (by Name)
A - E
F - J
K - O
losat204
losav132
losbe051
losbe053
losbe056
losbe071
losbe102
losbe105
losbe228
P - T
U - Z
Connectivity
Database Instances
Test Group
Engineering
Finance
372
314
370
Date
Fri Sep 20
Time
Edit Thresholds
Hosts
losat204
314
Connectivity
Storage
000183600885
FA1
060
DA-2A
All Other Devices

FIG 8

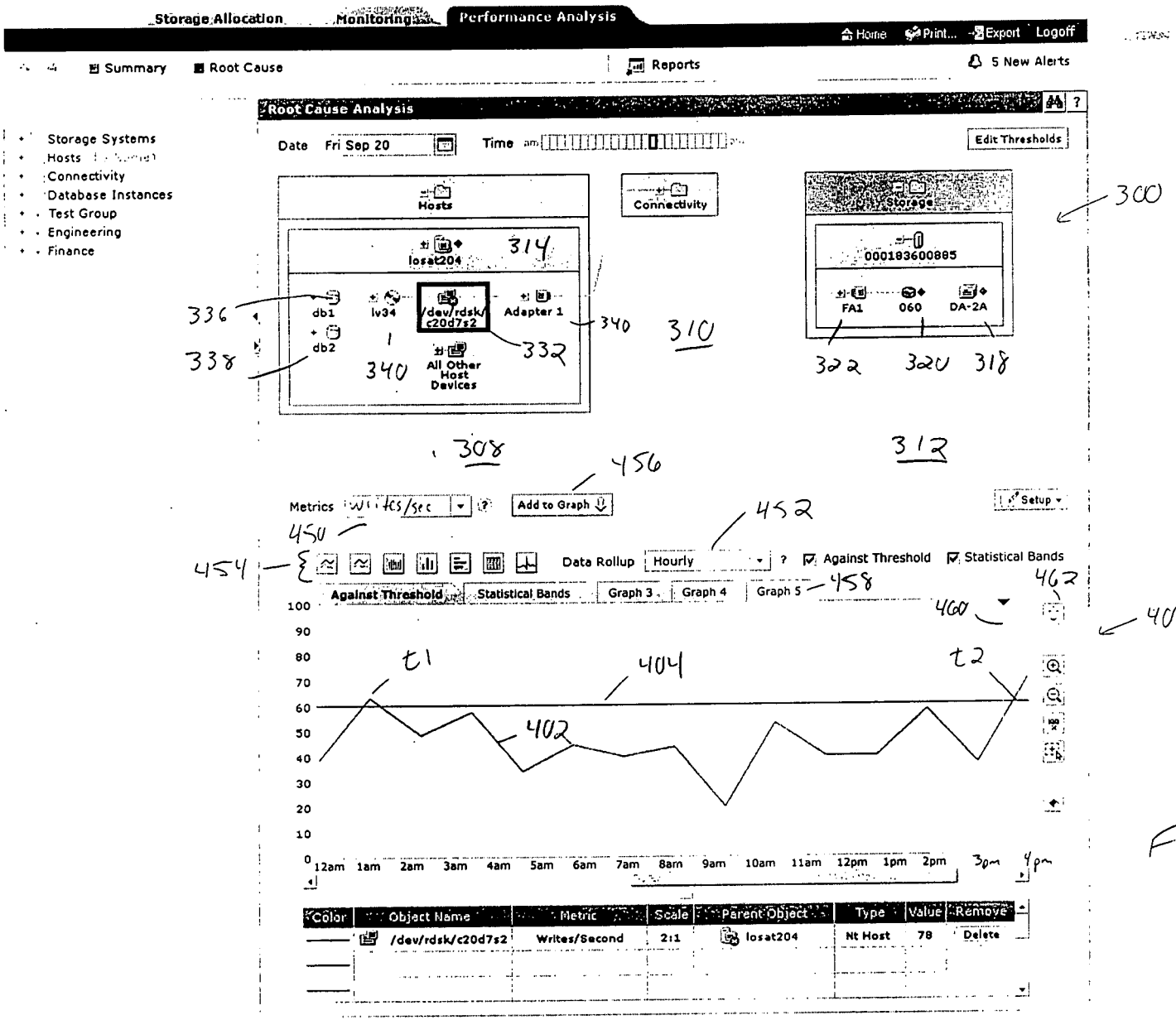

Storage Allocation
Monitoring
Performance Analysis
Home
Print...
Export
Logoff
Summary
Root Cause
Reports
5 New Alerts
Storage Systems
Hosts
Connectivity
Database Instances
Test Group
Engineering
Finance
Root Cause Analysis
Date Fri Sep 20
Time
Edit Thresholds
Hosts
Connectivity
Storage
losat204
314
000183600885
db1
db2
lv34
/dev/rdsk/c20d7s2
Adapter 1
All Other Host Devices
FA1
060
DA-2A
336
338
340
332
310
300
322
320
318
308
312
456
Metrics
Add to Graph
Setup
450
452
454
Data Rollup
Hourly
Against Threshold
Statistical Bands
Graph 3
Graph 4
Graph 5
458
462
460
400
100
90
80
70
60
50
40
30
20
10
0
t1
404
t2
402
12am
1am
2am
3am
4am
5am
6am
7am
8am
9am
10am
11am
12pm
1pm
2pm
3pm
4pm
Color
Object Name
Metric
Scale
Parent Object
Type
Value
Remove
/dev/rdsk/c20d7s2
Writes/Second
2:1
losat204
Nt Host
78
Delete

FIG. 9

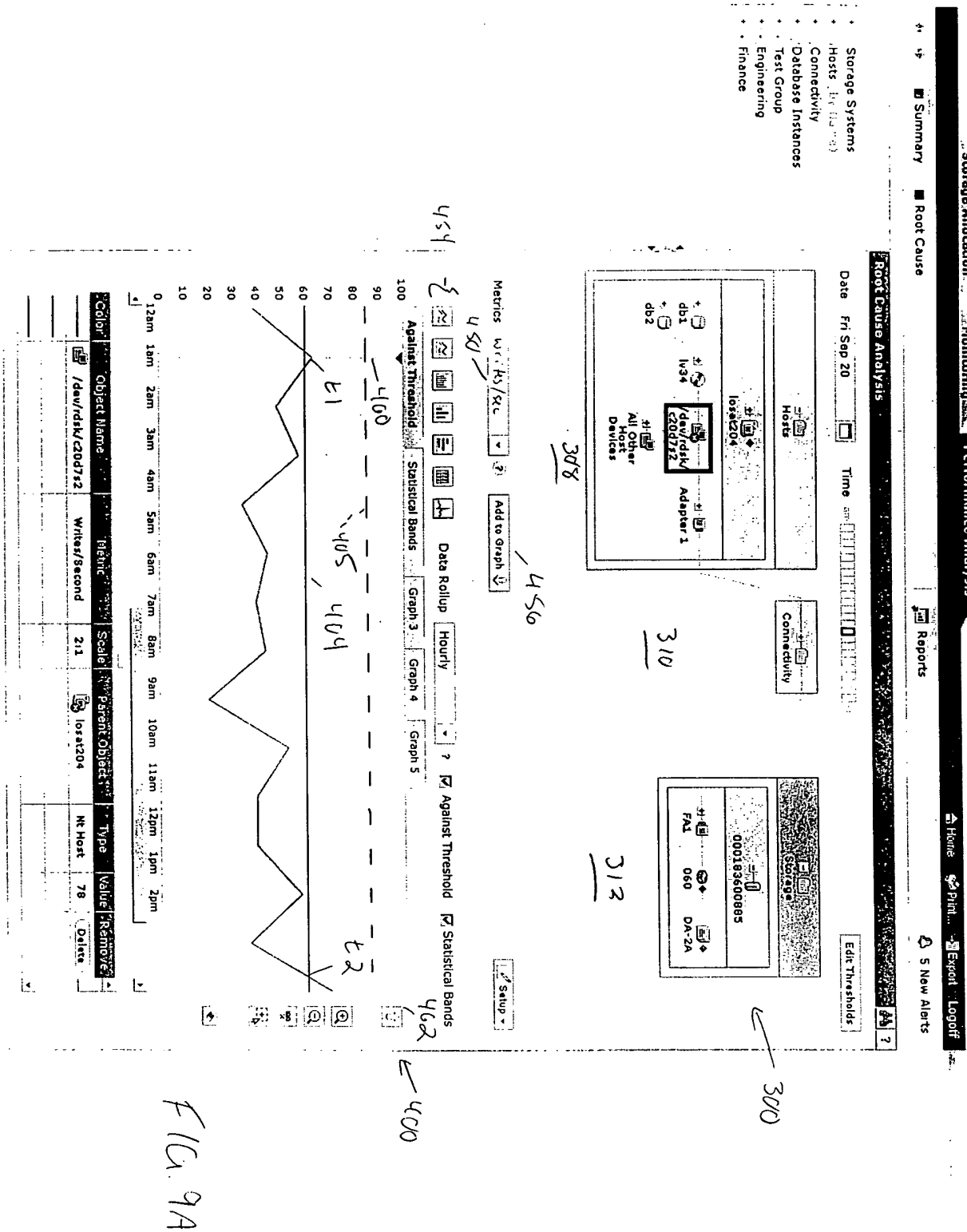
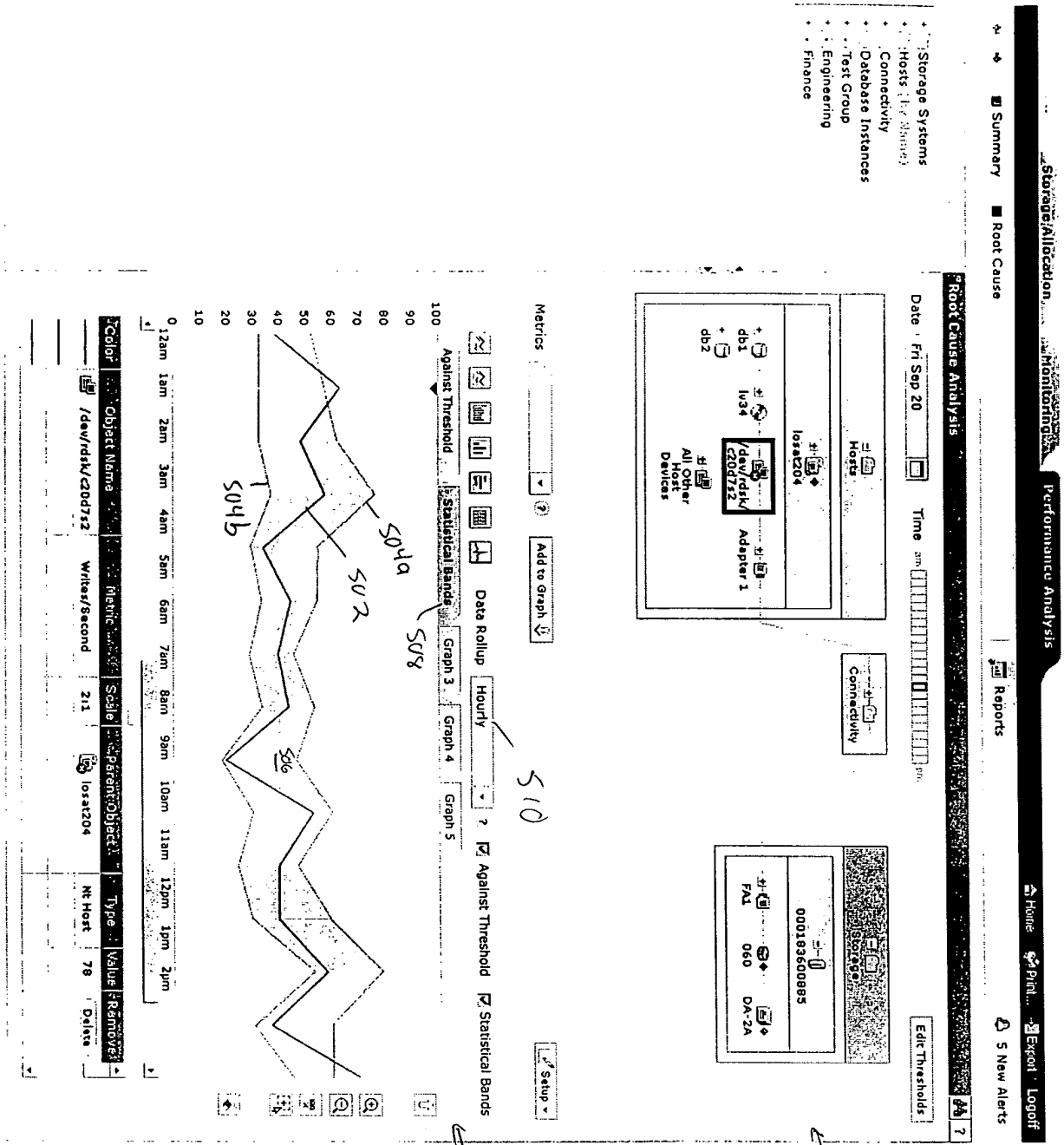

Storage Allocation
Monitoring
Performance Analysis
Home
Print...
Export
Logoff
Summary
Root Cause
Reports
5 New Alerts
Storage Systems
Hosts
Connectivity
Database Instances
Test Group
Engineering
Finance
Root Cause Analysis
Date Fri Sep 20
Time
Edit Thresholds
Hosts
Connectivity
Storage
lossit204
db1
db2
lv34
/dev/rdsk/c20d7s2
Adapter 1
All Other Host Devices
000183600885
FA1
060
DA-2A
Metrics
Add to Graph
Setup
Against Threshold
Statistical Bands
Data Rollup
Hourly
Statistical Bands
Against Threshold
Graph 3
Graph 4
Graph 5
Color
Object Name
Metric
Scale
Parent Object
Type
Value
Remove?
/dev/rdsk/c20d7s2
Writes/Second
2:1
lossit204
Nt Host
78
Delete
12am
1am
2am
3am
4am
5am
6am
7am
8am
9am
10am
11am
12pm
1pm
2pm
100
90
80
70
60
50
40
30
20
10
0
300
302
304
306
308
310
312
400
402
404
405
406
408
410
412
454
456

FIG. 9A


Storage Allocation
Monitoring
Performance Analysis
Home
Print...
Export
Logoff
Summary
Root Cause
Reports
5 New Alerts
Storage Systems
Hosts
Connectivity
Database Instances
Test Group
Engineering
Finance
Root Cause Analysis
Date Fri Sep 20
Time
Hosts
Connectivity
Edit Thresholds
lo3at204
db1
db2
lv34
/dev/rdsk/c20d7s2
Adapter 1
All Other Host Devices
000183600885
FA1
060
DA-2A
Metrics
Add to Graph
Data Rollup
Hourly
Against Threshold
Statistical Bands
Setup
Against Threshold
Statistical Bands
Graph 3
Graph 4
Graph 5
504a
502
508
504b
506
510
300
500
FIG 10
100
90
80
70
60
50
40
30
20
10
0
12am
1am
2am
3am
4am
5am
6am
7am
8am
9am
10am
11am
12pm
1pm
2pm
Color
Object Name
Metric
Scale
Parent Object
Type
Value
Remove
/dev/rdsk/c20d7s2
Writes/Second
211
lo3at204
Nt Host
78
Delete

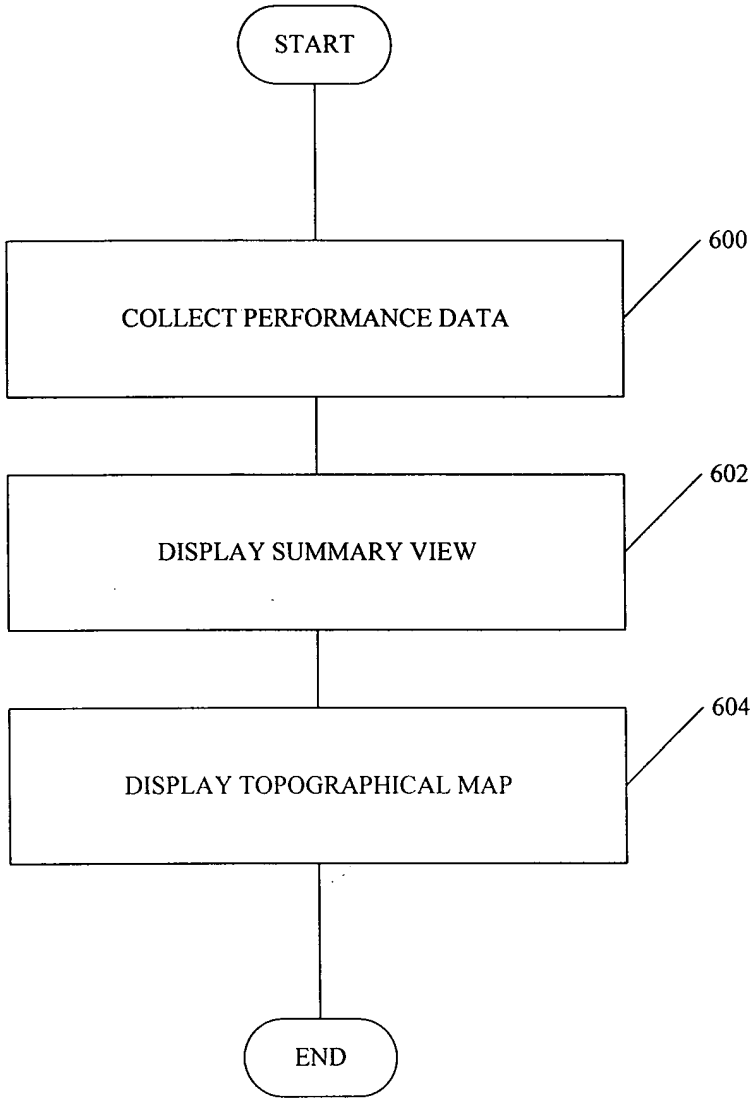

START
COLLECT PERFORMANCE DATA
600
DISPLAY SUMMARY VIEW
602
DISPLAY TOPOGRAPHICAL MAP
604
END

FIG. 11

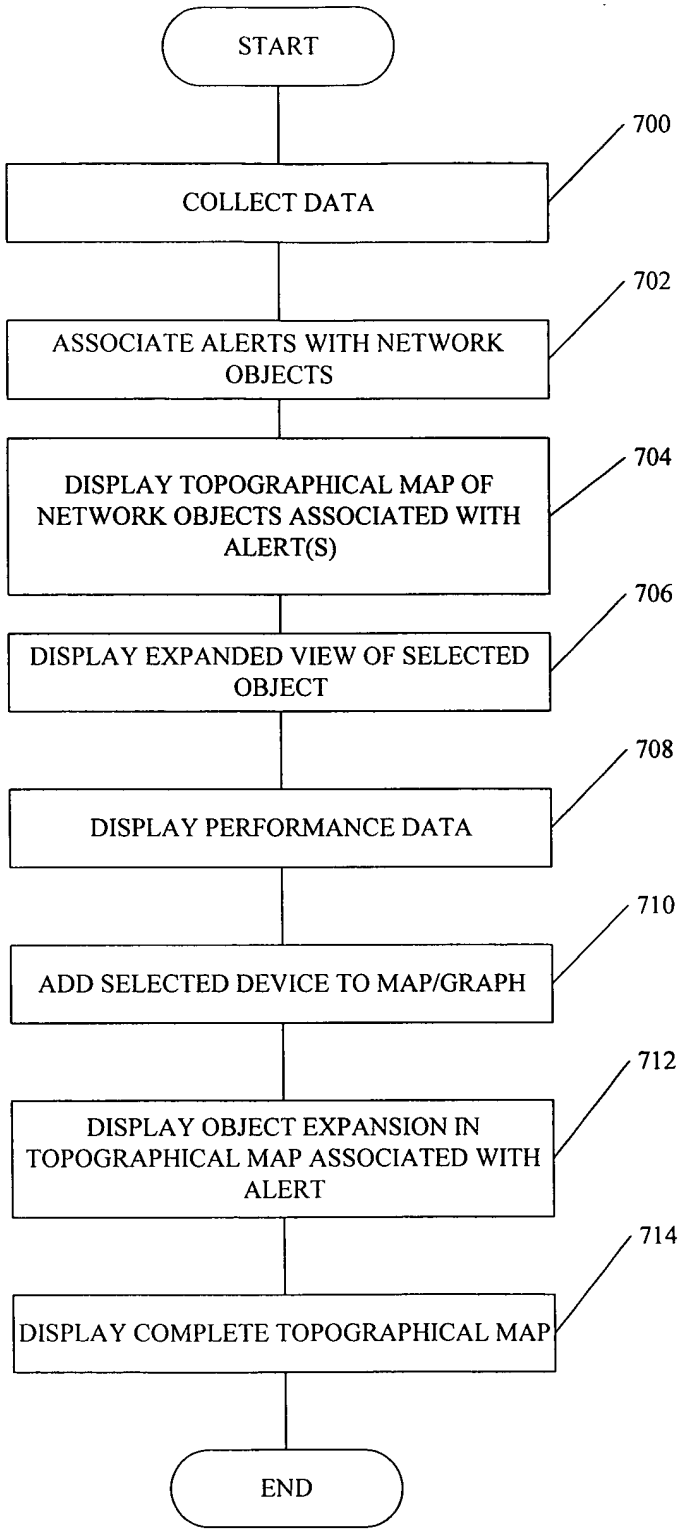

START
700
COLLECT DATA
702
ASSOCIATE ALERTS WITH NETWORK OBJECTS
704
DISPLAY TOPOGRAPHICAL MAP OF NETWORK OBJECTS ASSOCIATED WITH ALERT(S)
706
DISPLAY EXPANDED VIEW OF SELECTED OBJECT
708
DISPLAY PERFORMANCE DATA
710
ADD SELECTED DEVICE TO MAP/GRAPH
712
DISPLAY OBJECT EXPANSION IN TOPOGRAPHICAL MAP ASSOCIATED WITH ALERT
714
DISPLAY COMPLETE TOPOGRAPHICAL MAP
END

FIG. 12

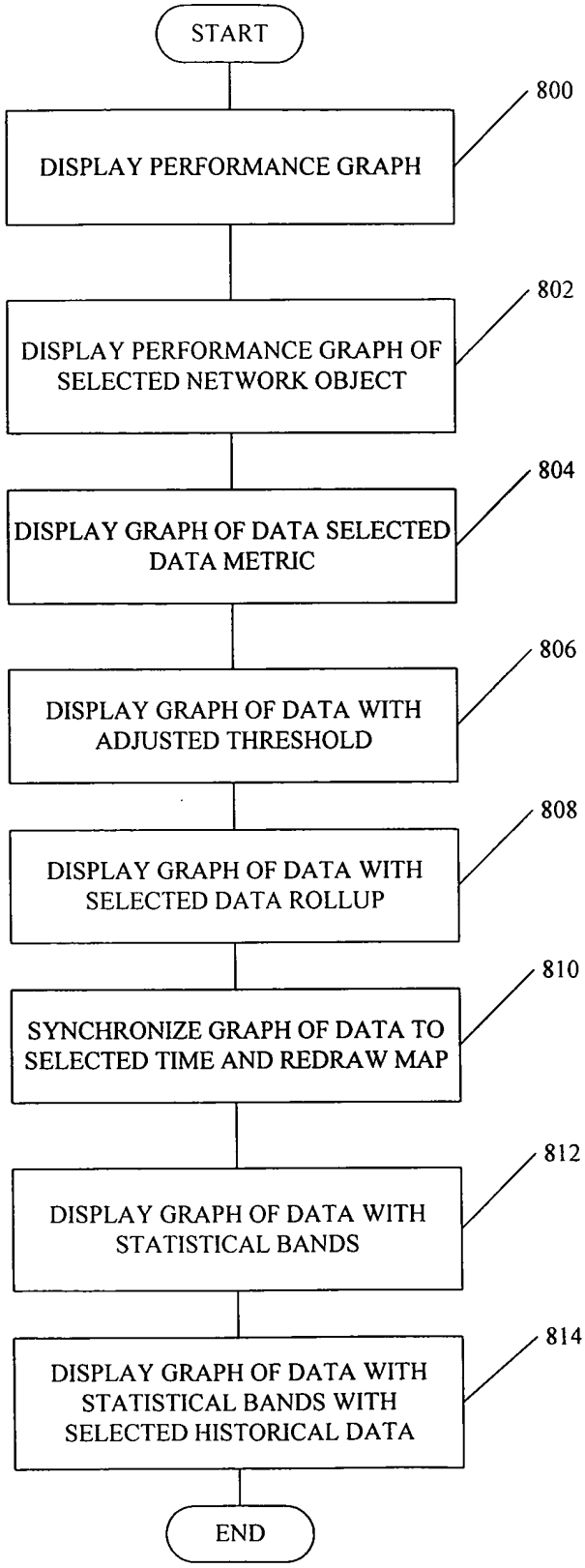

START
DISPLAY PERFORMANCE GRAPH
800
DISPLAY PERFORMANCE GRAPH OF SELECTED NETWORK OBJECT
802
DISPLAY GRAPH OF DATA SELECTED DATA METRIC
804
DISPLAY GRAPH OF DATA WITH ADJUSTED THRESHOLD
806
DISPLAY GRAPH OF DATA WITH SELECTED DATA ROLLUP
808
SYNCHRONIZE GRAPH OF DATA TO SELECTED TIME AND REDRAW MAP
810
DISPLAY GRAPH OF DATA WITH STATISTICAL BANDS
812
DISPLAY GRAPH OF DATA WITH STATISTICAL BANDS WITH SELECTED HISTORICAL DATA
814
END

FIG. 13

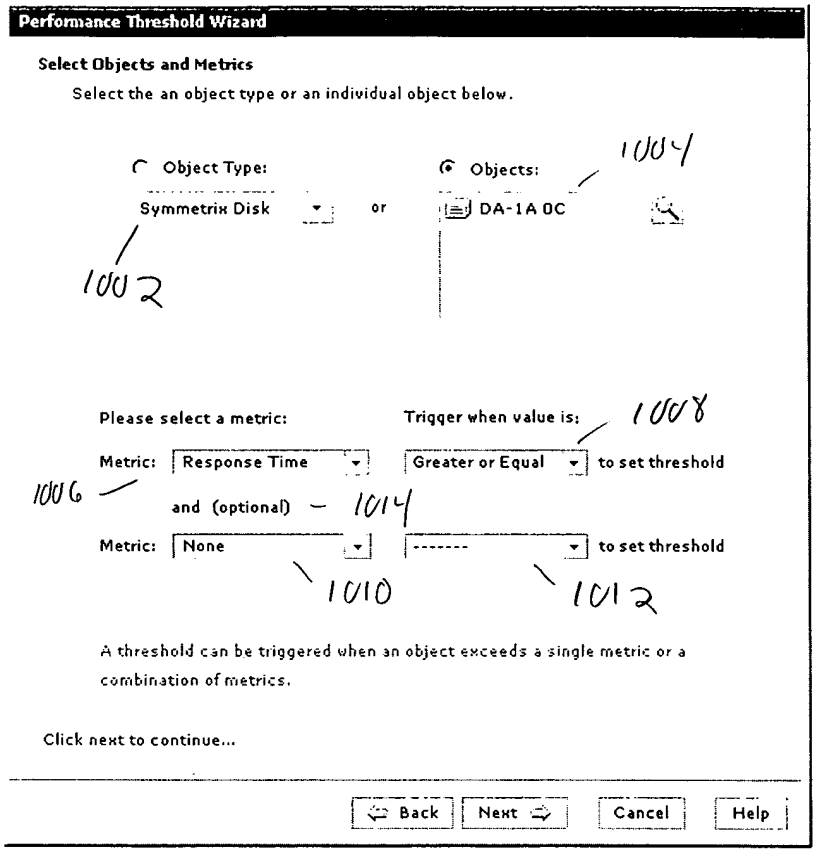

Performance Threshold Wizard
Select Objects and Metrics
Select the an object type or an individual object below.
Object Type:
Symmetrix Disk
or
Objects:
DA-1A 0C
1004
1002
Please select a metric:
Trigger when value is:
1008
Metric:
Response Time
Greater or Equal
to set threshold
1006
and (optional)
1014
Metric:
None
----
to set threshold
1010
1012
A threshold can be triggered when an object exceeds a single metric or a combination of metrics.
Click next to continue...
Back
Next
Cancel
Help

FIG. 14

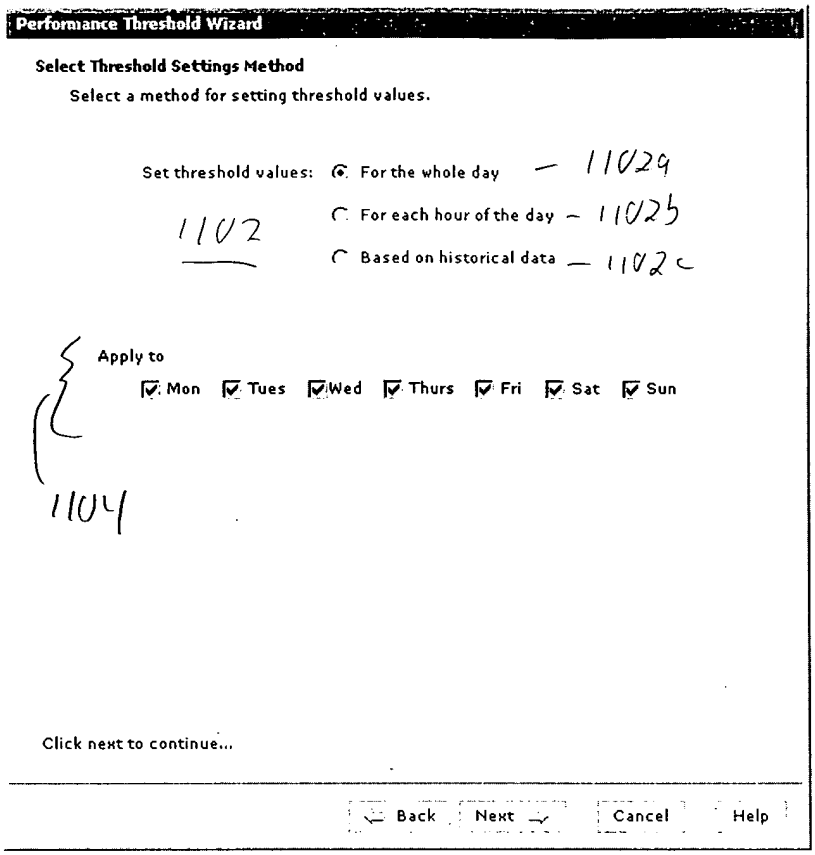

Performance Threshold Wizard
Select Threshold Settings Method
Select a method for setting threshold values.
Set threshold values:
For the whole day
For each hour of the day
Based on historical data
1102
1100
1102a
1102b
1102c
Apply to
Mon
Tues
Wed
Thurs
Fri
Sat
Sun
1104
Click next to continue...
Back
Next
Cancel
Help

FIG. 15

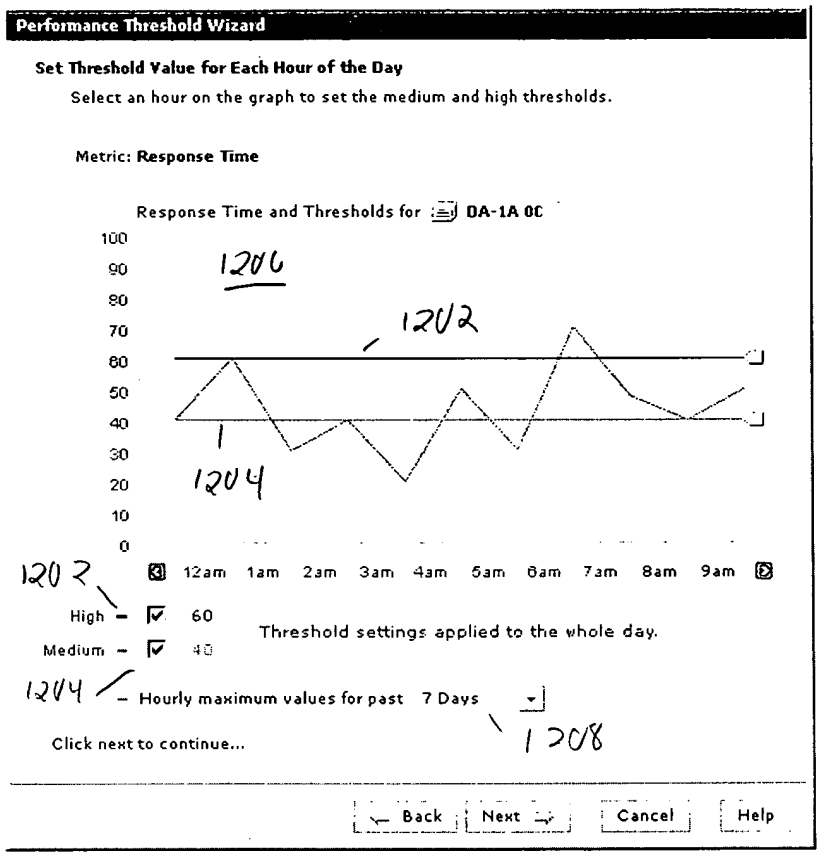

Performance Threshold Wizard
Set Threshold Value for Each Hour of the Day
Select an hour on the graph to set the medium and high thresholds.
Metric: Response Time
Response Time and Thresholds for DA-1A 0C
100
90
80
70
60
50
40
30
20
10
0
1206
1202
1204
1200
12am 1am 2am 3am 4am 5am 6am 7am 8am 9am
1202
High 60
Medium 40
Threshold settings applied to the whole day.
1204
Hourly maximum values for past 7 Days
1208
Click next to continue...
Back
Next
Cancel
Help

FIG. 16

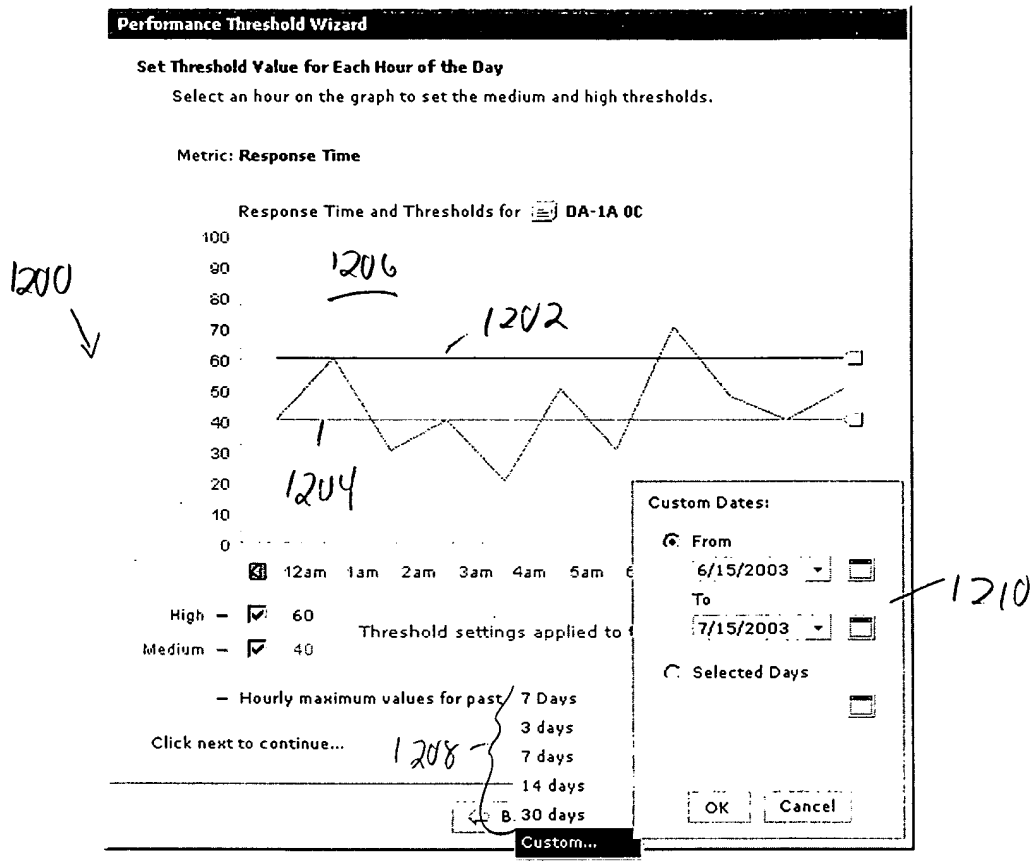

Performance Threshold Wizard
Set Threshold Value for Each Hour of the Day
Select an hour on the graph to set the medium and high thresholds.
Metric: Response Time
Response Time and Thresholds for DA-1A 0C
100
90
80
70
60
50
40
30
20
10
0
12am 1am 2am 3am 4am 5am
High 60
Medium 40
Threshold settings applied to
Hourly maximum values for past
7 Days
3 days
7 days
14 days
30 days
Custom...
Click next to continue...
Custom Dates:
From
6/15/2003
To
7/15/2003
Selected Days
OK
Cancel
1200
1202
1204
1206
1208
1210

FIG. 16A

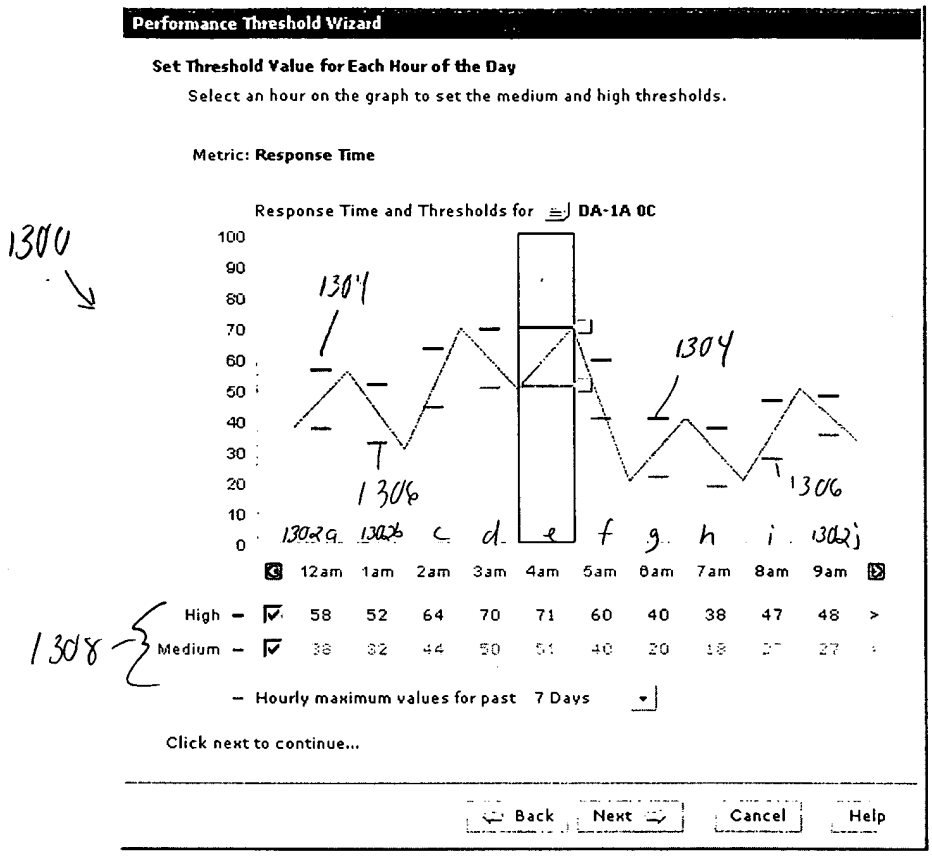

Performance Threshold Wizard
Set Threshold Value for Each Hour of the Day
Select an hour on the graph to set the medium and high thresholds.
Metric: Response Time
Response Time and Thresholds for DA-1A 0C
1300
1304
1306
1308
100
90
80
70
60
50
40
30
20
10
0
12am 1am 2am 3am 4am 5am 6am 7am 8am 9am
High 58 52 64 70 71 60 40 38 47 48
Medium 38 32 44 50 51 40 20 18 27 27
Hourly maximum values for past 7 Days
Click next to continue...
Back
Next
Cancel
Help

FIG. 17

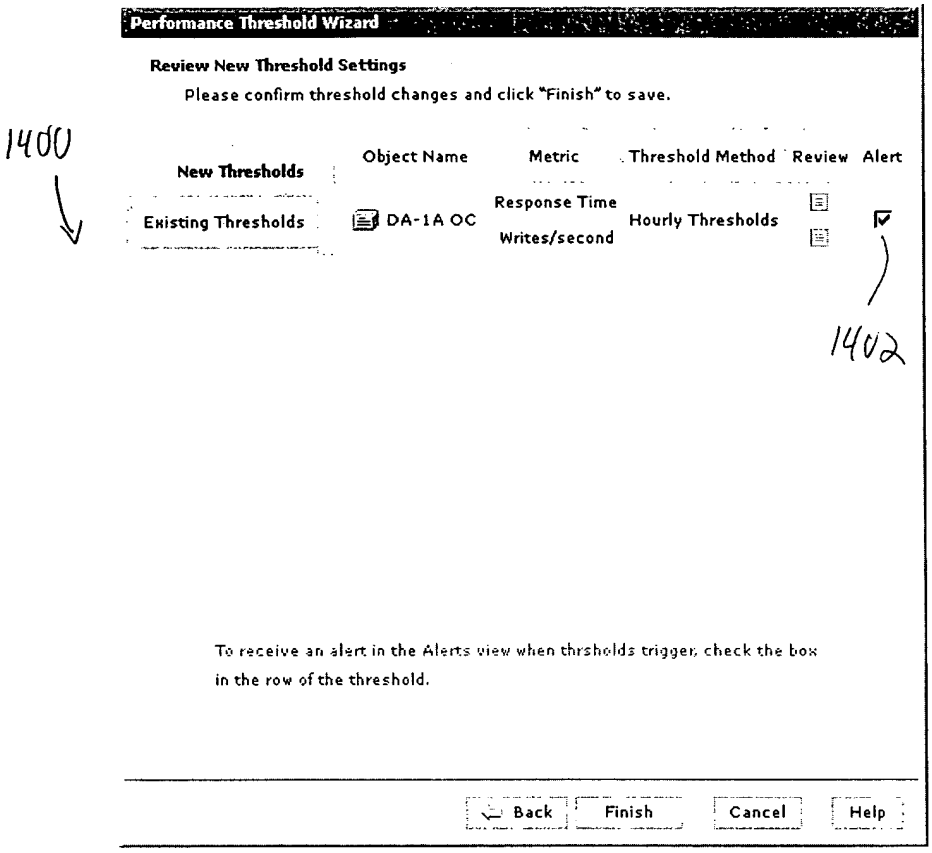

Performance Threshold Wizard
Review New Threshold Settings
Please confirm threshold changes and click "Finish" to save.
1400
New Thresholds
Existing Thresholds
Object Name
Metric
Threshold Method
Review
Alert
DA-1A OC
Response Time
Writes/second
Hourly Thresholds
1402
To receive an alert in the Alerts view when thrsholds trigger, check the box in the row of the threshold.
Back
Finish
Cancel
Help

FIG. 14